CLAIMS

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 A method of treatment or prophylaxis of hepatitis B virus in a subject comprising administering to said subject an effective amount of a compound of formula (1) or a pharmaceutically acceptable derivative, salt or prodrug thereof:

$$\begin{array}{c|c}
R_2 & R_4 \\
R_1 & 3 & 1 \\
\hline
R_5 & 0 \\
\hline
R_6 & 5 & 6 \\
\hline
R_7 & 0 \\
\hline
R_7 & 0
\end{array}$$
(1)

wherein X is OH, OR9 or halo;

R and R₁ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, aryl, or together with the carbon atom to which they are attached form a saturated or unsaturated C_{3.6}carbocyclic ring;

 R_2 and R_3 are independently selected from H, $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl or together with the bond between the carbon atoms to which they are attached form a double bond;

15 R₄ and R₅ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, OH, OR₉, halo or NR₁₀R₁₀ or together with the bond between the carbon atoms to which they are attached form a double bond;

 R_6 and R_7 are independently selected from H, $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl, OH or OR₉;

20 R₈ is independently selected from H, C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl, C₃₋₆cycloalkyl, OH, OR₉ or halo;

 R_9 is C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, aryl, $C(=0)R_{11}$ or $S(0)_2R_{12}$ or OR_9 is an amino acid residue;

each R₁₀ is independently selected from H and C₁₋₆alkyl;

 R_{11} is C_{1-21} alkyl, C_{2-21} alkenyl, C_{2-21} alkynyl, C_{3-6} cycloalkyl, C_{3-6} cycloalkyl C_{1-6} alkyl, aryl or aryl C_{1-6} alkyl; and

R₁₂ is C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl or aryl.

2. A method according to claim 1 wherein the compound of formula (1) is a compound of formula (2):

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R and R_1 are independently selected from H, $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl, aryl, or together with the carbon atom to which they are attached form a saturated or unsaturated $C_{3.6}$ carbocyclic ring;

 R_2 and R_3 are independently selected from H, C_{1-6} alkýl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl or together with the bond between the carbon atoms to which they are attached form a double bond;

 R_4 and R_5 are independently selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, OH, OR₉, halo or NR₁₀R₁₀ or together with the bond between the carbon atoms to which they are attached form a double bond;

 R_9 is C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, aryl, $C(=0)R_{11}$ or $S(0)_2R_{12}$ or OR_9 is an amino acid residue;

each R₁₀ is independently selected from H and C₁₋₆alkyl;

 R_{11} is $C_{1.21}$ alkyl, $C_{2.21}$ alkenyl, $C_{2.21}$ alkynyl, $C_{3.6}$ eyeloalkyl, $C_{2.6}$ eyeloalkyl, $C_{2.6}$ eyeloalkyl, aryl or aryl $C_{1.6}$ alkyl, and

R₁₂ is C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl or aryl.

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- 3. The method of claim 1 wherein the compound of formula (1) is selected from the group consisting of:
 - 8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione.
 - 8-hydroxy-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-b]pyran-7,10-dione,
- 9-bromo-8-hydroxy-3,3-dimethyl-1,2-dihydro-3*H*-naphtho[2,1-*h*]pyran-7,10-dione,
 - 9-bromo-8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione,
 - 9-bromo-3,3-dimethyl-8-(4-methylhenzenesulfonyloxy)-1,2-dihydro-3*H*-naphtho[2,1-b]pyran-7,10-dione,
 - 9-bromo-3,3-dimethyl-8-(4-methylbenzenesulfonyloxy)-3H-naphtho[2,1-b]pyran-7
- 15 ,10-dione,
 - 8-acetoxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione,
 - 2,9-dibromo-1,8-dihydroxy-3,3-dimethyl-1,2-dihydro-3*H*-naphtho[2,1-*b*]pyran-7,1 0-dione,
 - 8,9-dichloro-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-b]pyran-7,10-dione,
- 20 7,8,10-triacetoxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran,
 - 9-Bromo-8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione.
 - 9-Bromo-8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione.
 - 9-Bromo-3,3-dimethyl-8-(4-mothylbenzonesulfonyloxy)-1,2-dihydro-3*H*-naphtho[2,1-*b*]pyran-7,10-dione.
- 25 9-Bromo-3,3-dimethyl-8-(4-methylbenzenesulfonyloxy)-3*H*-naphtho[2,1-*b*|pyran-7,10-dione,
 - 8-Bromo-3,3-dimethyl-9-(4-methylbenzenesulfonyloxy)-3*H*-naphtho[2,1-*h*]pyran-7,10-dione.
 - 8-Bromo-3,3-dimethyl-9-(4-methylbenzencsulfonyloxy)-1,2-dihydro-3H-
- naphtho[2,1-b]pyran-7,10-dione, 8,9-Diehloro-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-b]pyran-7,10-dione,

Sodium 3,3-dimethyl-7,10-dioxo-7,10-dihydro-3*H*-benzo[*f*]chromen-8-olate; Sodium 3,3-dimethyl-7,8-dioxo-7,8-dihydro-3*H*-benzo[*f*]chromen-10-olate 8-Hydroxy-3-methyl-3-phenyl-3*H*-benzo[*f*]chromene-7,10-dione, and 8-Hydroxy-3,3-diphenyl-3*H*-benzo[*f*]chromene-7,10-dione.

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A method according to claim 1 wherein the compound of formula (1) is selected from the group consisting of:
8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione,
8-hydroxy-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-b]pyran-7,10-dione).

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5. The method of claim 1 wherein the compound of formula (1) is a compound of formula (3):

$$R_2$$
 R_4
 R_5
 R_6
 R_7
 R_8
 R_8
 R_8
 R_8
 R_8
 R_8
 R_8

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wherein X is OH, OR, or halo

R and R₁ are independently selected from H, C₁₋₆alkyl, C₂₋₆alkcnyl, C₂₋₆alkynyl, C₃₋₆cycloalkyl, aryl, or together with the carbon atom to which they are attached form a saturated or unsaturated C₃₋₆carbocyclic ring;
R₂ and R₃ are independently selected from H, C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl,

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 R_2 and R_3 are independently selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl or together with the bond between the carbon atoms to which they are attached form a double bond;

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 R_4 is selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, halo or $NR_{10}R_{10}$ or together with R_5 and the bond between the carbon atoms to which R_4 and R_5 are attached, form a double bond;

 R_5 is selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, Ol-I, OR₉, halo or $NR_{10}R_{10}$ or together with R_4 and the bond between the curbon atoms to which R_4 and R_5 are attached, form a double bond;

 R_6 and R_7 are independently selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, Olf or ORs;

R₈ is independently selected from H, C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl,

10 C₃₋₆cycloalkyl, OH, OR₉ or halo;

 R_9 is $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl, aryl, $C(=0)R_{13}$ or $S(0)_2R_{12}$ or OR_9 is an amino acid residuc;

each R₁₀ is independently selected from H and C_{1.6}alkyl;

 R_{11} is C_{1-21} alkyl, C_{2-21} alkenyl, C_{2-21} alkynyl, C_{3-6} cycloalkyl, C_{3-6} cycloalkyl C_{1-6} alkyl, aryl or aryl C_{1-6} alkyl; and

R₁₂ is C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl or aryl.

- 6. A method according to any one of claims I to 5 further comprising administering a second therapeutic agent.
- 7. A compound of Formula (1) or a pharmaceutically acceptable derivative, salt or prodrug thereof:

wherein X is OH, OR, or halo;

R and R₁ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, aryl, or together with the carbon atom to which they are attached form a saturated or unsaturated C_{3.6}carbocyclic ring;

R₂ and R₃ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl or together with the bond between the carbon atoms to which they are attached form a double bond;

R₄ and R₅ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, OH, OR₉, halo or NR₁₀R₁₀ or together with the bond between the carbon atoms to which they are attached form a double bond;

 R_9 is C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, aryl, $C(=O)R_{11}$ or $S(O)_2R_{12}$ or OR_9 is an amino acid residue;

each R₁₀ is independently selected from H and C₁₋₆alkyl;

R₁₁ is C₁₋₂₁alkyl, C₂₋₂₁alkenyl, C₂₋₂₁alkynyl, C₃₋₆eycloalkyl, C₃₋₆eycloalkylC₁₋₆alkyl, aryl or arylC₁₋₆alkyl; and

R₁₂ is C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl or aryl;

with the proviso that when R and R_1 are both methyl and R is OH or OR₉, R_5 is not selected from OH, OR₉ or NHR₉.

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8. A compound according to claim 7 wherein the compound of Formula (1) is a compound of formula (2):

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R and R₁ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, aryl, or together with the carbon atom to which they are attached form a saturated or unsaturated C_{3.6}carbocyclic ring;

 R_2 and R_3 are independently selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl or together with the bond between the carbon atoms to which they are attached form a double bond;

10 R₄ and R₅ are independently selected from H, C_{1.6}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, OH, OR₉, halo or NR₁₀R₁₀ or together with the bond between the carbon atoms to which they are attached form a double bond;

 R_6 and R_7 are independently selected from H, $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl, OH or OR₉;

15 R₈ is independently selected from H, C_{1.5}alkyl, C_{2.6}alkenyl, C_{2.6}alkynyl, C_{3.6}cycloalkyl, OH, OR₉ or halo;

 R_9 is C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, aryl, $C(=0)R_{11}$ or $S(O)_2R_{12}$ or OR_9 is an amino acid residue;

each R₁₀ is independently selected from H and C_{1.6}alkyl;

20 R₁₁ is C₁₋₂₁alkyl, C₂₋₂₁alkenyl, C₂₋₂₁alkynyl, C₃₋₆cycloalkyl, C₃₋₆cycloalkylC₁₋₆alkyl, aryl or arylC₁₋₆alkyl; and

R₁₂ is C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl or aryl.

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A compound according to claim 7 wherein the compound of formula (1) is selected 9. from the group consisting of: 8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione, 8-hydroxy-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-h]pyran-7,10-dione, 9-bromo-8-hydroxy-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-h]pyran-7,10-dione, 5 9-bromo-8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dionc, 9-bromo-3,3-dimethyl-8-(4-methylbenzenesulfonyloxy)-1,2-dihydro-3H-naphtho[2 ,1-h]pyran-7,10-dione, 9-bromo-3,3-dimethyl-8-(4-methylbenzenesulfonyloxy)-3H-naphtho[2,1-h]pyran-7 10 8-acetoxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione, 2,9-dibromo-1,8-dibydroxy-3,3-dimethyl-1,2-dibydro-3H-naphtho[2,1-b]pyran-7,1 8.9-dichloro-3,3-dimethyl-1,2-dihydro-3H-naphtho[2,1-h]pyran-7,10-dione, 7,8,10-triacetoxy-3,3-dimethyl-3H-naphtho(2,1-b)pyran, 15 9-Bromo-8-hydroxy-3,3-dimethyl-3H-naphtho[2,1-b]pyran-7,10-dione. 9-Bromo-8-hydroxy-3,3-dimethyl-3II-naphtho[2,1-b]pyran-7,10-dione. 9-Bromo-3,3-dimethyl-8-(4-methylbenzenesulfonyloxy)-1,2-dihydro-3Hnaphtho[2,1-b]pyran-7,10-dione. 9-Bromo-3,3-dimethyl-8-(4-methylbenzenesulfonyloxy)-3H-naphtho[2,1-b]pyran-20 8-Bronto-3,3-dimethyl-9-(4-methylbenzenesulfonyloxy)-3H-naphtho[2,1-b]pyran-7,10-dione, 8-Bromo-3,3-dimethyl-9-(4-methylbenzenesulfonyloxy)-1,2-dihydro-3Hnaphtho[2,1-b]pyran-7,10-dione. 25 8,9-Dichloro-3,3-dimethyl -1,2-dihydro-3H-naphtho[2,1-b]pyran-7,10-dione, Sodium 3,3-dimethyl-7,10-dioxo-7,10-dihydro-3H-benzo[/]chromen-8-olate; Sodium 3,3-dimethyl-7,8-dioxo-7,8-dihydro-3H-benzo[/]chromen-10-olate; 8-Hydroxy-3-methyl-3-phonyl-3H-benzolf|chromene-7,10-dione, and

8-Hydroxy-3,3-diphenyl-3H-benzo[f]chromene-7,10-dione.

10. A compound according to claim 7 wherein the compound of formula (1) is selected from the group consisting of:

8-hydroxy-3,3-dimethyl-3*H*-naphtho[2,1-*b*]pyran-7,10-dione, 8-hydroxy-3,3-dimethyl-1,2-dihydro-3*H*-naphtho[2,1-*b*]pyran-7,10-dione).

11. The compound of claim 7 wherein the compound of formula (1) is a compound of formula (3):

$$R_0$$
 R_1
 R_2
 R_3
 R_5
 R_8
 R_8
 R_9
 R_9
 R_9
 R_9
 R_9
 R_9

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wherein X is OH, OR, or halo

R and R_1 are independently selected from H, $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl, aryl, or together with the carbon atom to which they are attached form a saturated or unsaturated $C_{3.6}$ carbocyclic ring;

 R_2 and R_3 are independently selected from H, $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl or together with the bond between the carbon atoms to which they are attached form a double bond;

 R_4 is selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, halo or $NR_{10}R_{10}$ or together with R_5 and the bond between the carbon atoms to which R_4 and R_5 are attached, form a double bond:

R₅ is selected from H, C₁₋₆alkyl, C₂₋₆alkenyl, C₂₋₆alkynyl, C₃₋₆cyclocalkyl, OH, OR₉, halo or NR₁₀R₁₀ or together with R₄ and the bond between the carbon atoms to which R₄ and R₅ are attached, form a double bond;

R₆ and R₇ are independently selected from H, C₁₋₆alkyl, C₂₋₆alkernyl, C₂₋₆alkynyl,

- 5 C3.6cycloalkyl, OH or OR9;
 - R_8 is independently selected from H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} eyeloalkyl, OH, OR₂ or halo;
 - R_9 is $C_{1.6}$ alkyl, $C_{2.6}$ alkenyl, $C_{2.6}$ alkynyl, $C_{3.6}$ cycloalkyl, aryl, $C(=O)R_{11}$ or $S(O)_2R_{12}$ or OR_9 is an amino acid residue;
- cach R₁0 is independently selected from H and C₁-6alkyl;

 R₁₁ is C₁-2₁alkyl, C₂-2₁alkenyl, C₂-2₁alkynyl, C₃-6cycloalkyl, C₃-6cycloalkylC₁-6alkyl, aryl or arylC₁-6alkyl; and

 R₁2 is C₁-6alkyl, C₂-6alkenyl, C₂-6alkynyl or aryl.
- 15 12. A pharmaceutical composition comprising a compound according to any one of claims 7 to 11 and a pharmaceutically acceptable carrier, diluent or excipient.